Section titles have been added to the Application, as required by the examiner in the Office Action.

The examiner's comments with respect to the claim language as set forth in paragraph 6 of the Office Action have been carefully considered. In drafting the new set of claims, care has been taken to be responsive to these requirements in providing appropriate antecedent basis and definiteness to the terms of the claims as now presented.

The primary references of Inoue, et al. (USP 5,955,352) and Croteau, et al. (USP 5,700,655), as well as the secondary reference of Merkh, et al. (USP 5,281,540) have been reviewed along with the examiner's comments thereon. It is submitted that the references, taken individually, or in combination, fail to anticipate, or render obvious, the apparatus and methods of current independent claims 45, 72, 79, 85, 89 and 100, along with their respectively dependent claims 46-71, 73-78, 80, 86-88, 90-99 and 101-104.

Independent claim 45 recites applicant's novel and unobvious construction of upper and lower spaced opposed surfaces defining a space therebetween which is sufficiently small to facilitate the flow of fluid in this space by capillary action. This facilitates the flow of liquid introduced into the space through the at least one opening providing access to the space from an external location. The wells are proportioned in dimensions such that when excess fluid is subsequently withdrawn through the one opening or another opening, the wells remain substantially filled with liquid. It is submitted that this independent claim is patentably distinct over the art. Similarly, it is submitted that the defendant claims 46 through 71 add features which in the environment of patentably distinct independent claim 45 are also patentably distinct over the art.

Independent claim 72 is directed to applicant's novel and unobvious assay plate structure for conducting optical assays of a fluid analyte wherein a disc having upper and lower plates, spaced apart a sufficiently shallow distance to facilitate the flow of fluid between the plates by capillary action, has radial extending walls disposed between the plates, such walls subdividing the disc into a plurality of disc sectors. A plurality of disc inserts are arranged to be received by

the respective disc sectors and to be retained therein. The structure further includes a plurality of openings through the upper surface, at least one opening above each disc sector for introducing a liquid analyte into the sector space between the upper plate and the disc insert. The upper surface of the disc insert and the opposed surface of the upper plate are substantially planar with the flow of therebetween being facilitated by capillary action. It is submitted that this structure is patentably distinct over the art, as are the following dependent claims 73-78 which add their recited features in the environment of patentably distinct independent claim 72.

Method claim 79 is directed to applicant's novel and unobvious method of providing a surface within a substantially enclosed chamber having a plurality of wells at spaced locations to allow monitoring of a reaction at each well location. The wells are proportioned and dimensioned to retain a volume of fluid in each well following introduction of a fluid into the chamber and then withdrawal of excess fluid from the chamber, the chamber being provided to facilitate the flow of fluid within the chamber by capillary action. The method goes on to recite the treating of each well with a first reagent, flooding the enclosed chamber and covering the wells with a fluid carrying at least a second reagent. Excess fluid is then removed from the chamber to leave a mixture of the first and second reagents in the wells. The method then includes optically assessing the wells and determining if a reaction occurred and correlating the reaction results to provide an assay of the chemical or biochemical reactions under test. It is submitted that this method is patentably distinct over the art. It is submitted that the added features of the dependent claims 81-84, in the environment of independent parent claim 79, are also patentably distinct over the art.

Independent method claim 85 recites applicant's novel and unobvious method of conducting an assay using a multi-sample assay plate structure as recited wherein the lower surface within the recited chamber is adapted to receive spots of an insoluble substrate, carrying a first reagent, or no reagent if a control spot, to create a plurality of separate reaction sites within the chamber. Thus, when a second reagent is present in the fluid introduced into the chamber for reacting with the first reagent, an observable reaction in the chamber can be produced. The method includes disposing a plurality of spots of an insoluble substrate on the recited lower

surface at predetermined distances apart to create a plurality of reaction sites, the spots carrying a first reagent, or none if a control spot. The method then goes on to recite the flooding of the chamber with a fluid carrying at least one second reagent, withdrawing the excess fluid from the chamber to leave spots of fluid in contact with the substrate spots and then optically monitoring the spot locations to detect a reaction. It is submitted that this method is patentably distinct over the art, as are the dependent claims 86-88, when the features thereof are considered in the environment of parent claim 85.

Independent apparatus claim 89 and method claim 100 recite applicant's multi-reaction site assay plate structure and method including upper and lower surfaces defining a space therebetween, the opposed surfaces being spaced from one another a sufficiently small spacing to facilitate the flow of fluid within the space by capillary action. At least one opening is provided to allow access to the space from an external location to allow filling of fluid into the space through such opening. The lower surface within the space is provided with a plurality of separate reaction sites which are treated to increase their hydrophilicity such that when excess fluid is subsequently withdrawn from the space, some of the liquid remains at the sites. The surface between reaction sites is treated to increase its hydrophobicity to facilitate the provision of separate liquid covered sites. It is submitted that these independent claims are patentably distinct over the art of record which does not suggest such a construction or mode of operation. It is submitted that the following dependent claims 90-99 and 101-104, respectively, add features to the independent claims, which when viewed in the environment thereof, are patentably distinct over the art.

Reconsideration and allowance of all claims is respectfully requested.

Applicant also hereby petitions the Commissioner of Patents and Trademarks for a one-month extension of time to respond to the Office Action mailed January 9, 2001. Accordingly, the new due date will be: May 9, 2001. Applicant is a small entity; submitted herewith is our check for $55.00.

Please charge any additional fee that may be due or credit any overpayment to our deposit Account No. 16-2230. A duplicate copy of this Petition is enclosed.

Respectfully submitted,

Dated: May 9, 2001

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